

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A resin composite material comprising:
a thermoplastic resin composition comprising a polyphenylene oxide;
a layered clay mineral dispersed in said thermoplastic resin composition and
organized with an organizing agent; and
a polar compound dispersed in said thermoplastic resin composition and chemically
bonded to said layered clay mineral,
wherein the polar compound is at least one selected from the group consisting of a
phosphate compound and a phosphite.

Claim 2 (Original): The resin composite material according to Claim 1, wherein said
polar compound is a phosphate compound.

Claim 3 (Original): The resin composite material according to Claim 1, wherein said
polar compound is a phosphite.

Claim 4 (Currently Amended): A method of producing a resin composite material
comprising[[:]] a thermoplastic resin composition comprising a polyphenylene oxide; a
layered clay mineral dispersed in said thermoplastic resin composition and organized with an
organizing agent; and a polar compound dispersed in said thermoplastic resin composition
and chemically bonded to said layered clay mineral, said method comprising:
~~a step of~~ dispersing the polar compound in the thermoplastic resin composition
comprising the polyphenylene oxide, thereby obtaining a mixture of said thermoplastic resin
composition and said polar compound; and

~~a step of~~ dispersing the layered clay mineral organized with the organizing agent, in said mixture, thereby obtaining said resin composite material,

wherein the polar compound is at least one selected from the group consisting of a phosphate compound and a phosphite.

Claim 5 (Currently Amended): A method of producing a resin composite material comprising[[:]] a thermoplastic resin composition comprising a polyphenylene oxide; a layered clay mineral dispersed in said thermoplastic resin composition and organized with an organizing agent; and a polar compound dispersed in said thermoplastic resin composition and chemically bonded to said layered clay mineral, said method comprising:

~~a step of~~ mixing the layered clay mineral organized with the organizing agent, and the polar compound, thereby obtaining a complex in which said layered clay mineral and said polar compound are chemically bonded to each other between layers of said layered clay mineral; and

~~a step of~~ dispersing said complex in the thermoplastic resin composition comprising the polyphenylene oxide, thereby obtaining said resin composite material,

wherein the polar compound is at least one selected from the group consisting of a phosphate compound and a phosphite.

Claim 6 (New): The resin composite material according to Claim 1, wherein the layered clay mineral organized with the organizing agent is present in an amount of from 7 to 200 parts by weight per 100 parts by weight of the thermoplastic resin composition.

Claim 7 (New): The resin composite material according to Claim 1, wherein a flat molded piece does not have a diffraction peak in the X-ray diffraction spectrum.

Claim 8 (New): The resin composite material according to Claim 1, comprising at least one selected from the group consisting of triphenyl phosphite and tridecyl phosphite.

Claim 9 (New): The resin composite material according to Claim 1, wherein the layered clay mineral is sodium montmorillonite.

Claim 10 (New): The resin composite material according to Claim 1, wherein the organizing agent is an organic onium compound selected from the group consisting of an organic ammonium compound, an organic phosphonium compound, an organic pyridinium compound, and an organic sulfonium compound.

Claim 11 (New): The resin composite material according to Claim 1, comprising sodium montmorillonite and at least one of triphenyl phosphite or tridecyl phosphite.

Claim 12 (New): The method according to Claim 4, wherein the polar compound is a phosphate compound.

Claim 13 (New): The method according to Claim 4, wherein the polar compound is a phosphite.

Claim 14 (New): The method according to Claim 5, wherein the polar compound is a phosphate compound.

Claim 15 (New): The method according to Claim 5, wherein the polar compound is a phosphite.

Claim 16 (New): The resin composite material according to Claim 1, wherein the polyphenylene oxide is poly(2,6-dimethylphenylene ether).

Claim 17 (New): The resin composite material according to Claim 1, wherein the polyphenylene oxide has an intrinsic viscosity at 25°C in chloroform of from 0.1 to 1.5 dl/g.

Claim 18 (New): The resin composite material according to Claim 1, wherein the polar compound is a phosphite compound present in an amount of from 1.86 to 10% by weight based on the total weight of the resin composite material.

Claim 19 (New): The resin composite material according to Claim 1, having a tensile strength of 45 to 55 MPa.

Claim 20 (New): The resin composite material according to Claim 1, having an elongation at break of 12% or less.

Claim 21 (New): A resin composite material consisting essentially of:
a thermoplastic resin composition consisting essentially of one or more of a polyphenylene oxide or a polystyrene resin;
a layered clay mineral dispersed in said thermoplastic resin composition and organized with an organizing agent; and

a polar compound dispersed in said thermoplastic resin composition and chemically bonded to said layered clay mineral.

Claim 22 (New): The resin composite material according to Claim 21, wherein the layered clay mineral organized with the organizing agent is present in an amount of from 7 to 200 parts by weight per 100 parts by weight of the thermoplastic resin composition.

Claim 23 (New): The resin composite material according to Claim 21, having a tensile strength of 45 to 55 MPa.

Claim 24 (New): The resin composite material according to Claim 21, having an elongation at break of 12% or less.

Claim 25 (New): The resin composite material according to Claim 21, wherein said polar compound is a phosphate compound.

Claim 26 (New): The resin composite material according to Claim 21, wherein said polar compound is a phosphite.

Claim 27 (New): The resin composite material of Claim 21, wherein the polar compound is present in an amount of 1.86 to 10% by weight based on the total amount of the resin composite material.

Claim 28 (New): The resin composite material according to Claim 21, wherein a flat molded piece does not have a diffraction peak in the X-ray diffraction spectrum.

Claim 29 (New): The resin composite material according to Claim 21, comprising at least one selected from the group consisting of triphenyl phosphite and tridecyl phosphite.

Claim 30 (New): The resin composite material according to Claim 21, wherein the layered clay mineral is sodium montmorillonite.

Claim 31 (New): The resin composite material according to Claim 21, wherein the organizing agent is an organic onium compound selected from the group consisting of an organic ammonium compound, an organic phosphonium compound, an organic pyridinium compound, and an organic sulfonium compound.

Claim 32 (New): The resin composite material according to Claim 21, comprising sodium montmorillonite and at least one of triphenyl phosphite or tridecyl phosphite.

Claim 33 (New): The resin composite material according to Claim 21, wherein the polyphenylene oxide is poly(2,6-dimethylphenylene ether).

Claim 34 (New): The resin composite material according to Claim 21, wherein the polyphenylene oxide has an intrinsic viscosity at 25°C in chloroform of from 0.1 to 1.5 dl/g.

Claim 35 (New): The resin composite material according to Claim 21, wherein the polar compound is a phosphite compound present in an amount of from 1.86 to 10% by weight based on the weight of the resin composite material.

Claim 36 (New): A method of producing the resin composite material of Claim 21 comprising,

dispersing the polar compound in the thermoplastic resin composition, thereby obtaining a mixture of said thermoplastic resin composition and said polar compound; and
dispersing the layered clay mineral organized with the organizing agent, in said mixture, thereby obtaining said resin composite material.

Claim 37 (New): A method of producing a resin composite material of Claim 21, comprising

mixing the layered clay mineral organized with the organizing agent, and the polar compound, thereby obtaining a complex in which said layered clay mineral and said polar compound are chemically bonded to each other between layers of said layered clay mineral; and

dispersing said complex in the thermoplastic resin composition, thereby obtaining said resin composite material.

BASIS FOR THE AMENDMENT

Claims 1-37 are active in the present application. Independent Claim 1 has been amended to require that the polar compound is at least one of a phosphite compound and/or a phosphite. Support for the amendment is found in original Claims 2 and 3. Independent Claim 4 and 5 have likewise been amended. Claims 6-37 are new claims. Support for new Claim 6 is found on page 21, lines 13-19; page 26, lines 3-8; and page 30, lines 19-22 and Example 1. Support for new Claim 7 is found on page 27, lines 15-24; Table 1 on page 33; and page 33, lines 4-10. Support for new Claim 8 is found on page 28, line 7 and page 26, line 10. Support for new Claim 9 is found on page 26, line 13. Support for new Claim 10 is found on page 11, lines 10-17. Support for new Claim 11 is found on page 28, line 7; page 26, line 10; and page 16, line 21. Support for new Claims 12 and 14 is found in original Claim 2. Support for new Claims 13 and 15 is found in original Claim 3. Support for new Claims 16 and 17 is found on page 7, lines 12-22. The title of the specification has been amended. No new matter is believed to have been added by this amendment. Support for new Claims 18, 27 and 35 is found in Example 1 on page 26 (e.g., the lower limit "1.86% by weight" is supported by Example 1. In Example 1, the content of tridecyl phosphite (TDP) in the mixture of thermoplastic resin composition (TRC) and TDP is 2% by weight, and the content of the organized, layered clay mineral (OLCM) in the obtained resin composite material (RCM) is 7% by weight. Consequently, the content of TDP based on the total weight of RCM can be calculated as follows: (The content of TDP based on the total weight of RCM) = (the content of TDP in TRC) x (the content of TRC in RCM) = (2/100) x (100-7) [% by weight] = 1.86 [% by weight]) and on page 16, line 20. Support for new Claims 19 and 20 is found in Table 1 on page 33. New Claim 21 is an independent claim. Support for new independent Claim 21 is found in original Claim 1 and in the examples of the specification. For example, Example 1 on page 26 describes a composition containing only

polyphenylene oxide, a high-impact styrene, a polar compound and a layered clay mineral.

On page 1, lines 11-20 the background art is described as compositions that contain layered clay minerals with improved mechanical strength and durability. However, the prior art compositions may provide mixtures that do not have desirable mechanical strength and durability (page 3, lines 1-2). The claimed compositions are described to solve this problem by use of the layered clay mineral recited in the present claims (page 3, lines 11-15). It is further disclosed on page 6, lines 7-12 “The layered clay mineral can be adequately uniformly dispersed in the thermoplastic resin composition containing the polyphenylene oxide, so that it becomes feasible to satisfactorily enhance the characteristics of mechanical strength, durability, etc. of the resin composite material. It also becomes feasible to produce the resin composite material of the present invention with such excellent characteristics efficiently and securely by the production methods of the present invention.” Therefore the claimed compositions can be manufactured without additional steps of adding mechanical stability agents which may make the production of the composite resin less efficient.

Therefore Applicants submit that it was contemplated in the specification as originally filed that the compositions may be limited in their compositional characteristics and thereby provide improvements over the prior art compositions. Support for new dependent Claims 22-37 is found in the original claims and as mentioned above for support for new Claims 6-20.

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Ronesi and the Examiner's supervisor Mr. Jagannathan for the helpful and courteous discussion of October 13, 2004. During the discussion, Applicants' U.S. representative presented arguments that the combination of at least two of the prior art references is not appropriate in view of the disclosure in one prior art reference that compounds containing phosphorous-oxygen bonds may have a deleterious effect on the prior art compounds. Applicants' representative presented further arguments that the exclusion of components from the claimed invention may distinguish the claimed resin composite material from the prior art compositions which contain modifiers such as rubbers and/or glass fibers.

In one embodiment of the invention disclosed in the present application, Applicants have described a resin composite material that contains a clay mineral dispersed therein (see for example, page 3, lines 3-15). Applicants have disclosed that the claimed resin composite material has an increased interlayer distance of the layered clay mineral (page 17, lines 20-24). It is preferable that the interlayer distance is widened to the point that no layer structure is present in the layered clay mineral (page 18, lines 2-5). The absence of layers can be determined by X-ray diffraction. New dependent Claim 7 requires that a molded, flat test piece have no X-ray diffraction peak.

A clay mineral present in a form wherein the layer structure is no longer regular and the layered clay mineral is finely dispersed in the thermal plastic allows increased contact area between the resin and the layered mineral. This in turn may result in an improvement in the dynamic characteristics of resin composite materials such as mechanical strength and durability (page 25, lines 5-12).

Various compositions containing a polyphenylene oxide and a polar compound are described in the Examples of the specification (see Examples 1-9, pages 26-33). In Table 1

of the specification the inventive examples, which contain a polar compound adhering to the limitations of the present claims, are compared against examples which do not have the polar compound of the present claims. It is evident that the tensile strength and elongation at break of the resin composite materials adhering to the claim limitations are greater than those Comparative Examples which do not have the polar compound. It is also evident that the Comparative Examples exhibit an X-ray diffraction peak indicating that the layered structure of the comparative layered clay mineral may still be detected (see Table 1 on page 33).

Independent Claim 1 is drawn to a resin composite material which contains at least a thermoplastic resin composition comprising polyphenylene oxide; a layered clay mineral organized with an organizing agent and a polar compound. The polar compound may be a phosphate and/or a phosphite. The methods of independent Claims 4 and 5 require the presence of a polar compound. The polar compound of Claims 4 and 5 may be a phosphate compound and/or a phosphite.

The Office rejected the original claims as obvious in view of patents to Kato I (JP 2000-169,634) and Usuki (U.S. 5,973,053). The Office rejected the subject matter of original Claim 2 further in view of patents to Kato II (U.S. 5,936,023) and Patel (U.S. 6,579,926). The Office applies the Usuki reference for the following reasons (see Office Action of July 2, 2004):

Kato et al '634 is silent with respect to the addition of a polar compound that is chemically bonded to the layered clay mineral but discloses that the excellent mechanical properties observed with the invention arises from the delaminating of the clay layers and their distribution into the thermoplastic matrix which restrains the movement of the polymer molecule.

Usuki et al teaches the use of an organized layered clay mineral that is chemically bonded to a polar compound, whose presence is needed in order to gain a potentially limitless expansion of the interlayer distance of the clay mineral which results in a more uniform dispersion of the layered clay on a molecular level (column 4, lines 16-22). Aggregation of the clay mineral is therefore prevented. The addition of the polar compound is

necessary because the interlayer section can only accommodate one layer of the organic onium ion and thus limits the expansion of the clay mineral (col. 4, lines 13-15). This molecule is known as the first guest molecule. Given the advantage of increasing the interlayer section of the clay mineral for improved mechanical properties, it would have been obvious to one of ordinary skill in the art to utilize a polar compound as taught by Usuki et al in Kato et al '634's composition and thereby arrive at the present invention.

Therefore it appears that the Usuki reference is applied for its teaching of organized layered clay minerals chemically bonded to polar compounds. Applicants submit that none of the other prior art references relied upon by the Office explicitly disclose organized layered clay minerals chemically bonded to a polar compound or the advantage of increasing the interlayer section for improved mechanical properties.

Applicants traverse the rejection on the grounds that the Usuki patent explicitly discloses:

In the first aspect, it is not preferable to use the group such as imino group, phosphonyl group, sulfonyl group or the like, which conforms to the above-described polar group but is polarized to a relatively higher extent. This is because the main guest molecule containing such group has a low insolubility to the solvent or insufficient stability at high temperature when being dissolved, which cannot be easily used in the process for producing the composite clay material (column 5, lines 22-28).

As demonstrated in the text above, Usuki teaches away from the presently claimed invention in a material respect, namely Usuki discloses that phosphonyl compounds cause the prior art guest molecule to have low insolubility or insufficient stability at high temperatures.

Applicants also draw the Office's attention to page 2, line 13 through page 3, line 2 of the present specification:

Incidentally, where a thermoplastic resin composition containing polyphenylene oxide was used as a raw material for a resin composite material, it was necessary to add the layered clay mineral organized with the organizing agent, to the thermoplastic resin composition and knead them under high temperature conditions, in order to uniformly disperse the layered clay mineral in the thermoplastic resin composition.

However, the *kneading under such severe conditions shortened the layer-to-layer (interlayer) distance between layers of the layered clay mineral* because of thermal decomposition of the organizing agent, so as to fail in satisfactorily uniformly dispersing the layered clay mineral, which *resulted in failing to adequately enhance the characteristics of mechanical strength, durability, and so on.*

Applicants have identified a problem with prior art layered clay mineral-containing resin compositions. The prior art compositions may not be able to provide good mechanical performance because thermal decomposition may cause the prior art layered clay minerals to aggregate (e.g., have shortened interlayer distances). One way of preparing the presently claimed resin composite materials is by melt kneading, a process that necessarily takes place at a temperature close to or above the melting point or glass transition temperature of the thermoplastic resin. Applicants submit that the contradictory teaching of Usuki (e.g., that phosphonyl groups will negatively effect the solubility or high temperature stability of compositions containing such groups) would not lead those of ordinary skill in the art to prepare the claimed thermoplastic resin compositions containing phosphate or phosphite polar compounds because shortening of the interlayer distances in the layered clay mineral results in failing to provide desirable mechanical characteristics.

References cannot be combined where a reference teaches away from their combination (MPEP § 2145(X)(D)(2)). (See *In re Gurley*, 31 USPQ2d 1130 (Fed. Cir. 1994); “A reference may be said to teach away when a person of ordinary skill upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path taken by the inventor.”).

Applicants submit that Usuki teaches away from compositions containing phosphonyl compounds. The Usuki disclosure is therefore contradictory to its combination with the other references relied upon by the Office. Applicants submit that those of ordinary skill in the art would not be motivated to combine Usuki with the other prior art references relied upon by

the Office and furthermore would have no reasonable expectation of success in such a combination. Applicants submit that the combination of Usuki with the other prior art relied upon by the Office is not supportable and the reference and/or the rejection should be withdrawn. In the absence of Usuki the Office has not provided a *prima facie* case of obviousness because not all of the present claim limitations are explicitly disclosed in the other prior art relied upon by the Office.

Applicants submit that it is readily recognized by those of skill in the art that a phosphonyl compound is one having a phosphorous-oxygen bond. For example, methane phosphonyl chloride is the compound $\text{P}(=\text{O})(\text{Cl})_2(\text{CH}_3)$. This material has a phosphorus-oxygen bond.¹ Applicants submit that the phosphates and phosphites described in the present specification also have phosphorus-oxygen bonds. For example, tributyl phosphate is identified as a phosphate on page 15, line 1. Tributyl phosphate is a material of formula $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{O})_3\text{P}(=\text{O})$. This material necessarily has a phosphorus-oxygen bond. Likewise, dibutyl phosphite has the chemical formula $(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{O})_2\text{P}(\text{H})(=\text{O})$. Applicants attach herewith chemical structures and chemical information for tributyl phosphate and dibutyl phosphite downloaded from www.aldrich.com. Applicants submit that the similarity in the P-O bonding of the phosphonyl materials excluded by Usuki and the phosphates and phosphites recited in the present claims makes the contradictory teachings of Usuki highly relevant to the question of obviousness in the present case.

Applicants further submit that the subject matter of Usuki and Kato II is not pertinent prior art to the present invention because the Usuki and Kato II compositions are described as rubber compositions. Applicants submit that the mechanical and physical characteristics of rubber-based compositions are so different from the claimed compositions that those of

¹ This material is also known as methyl phosphonic dichloride, aka methane phosphonyl chloride.

ordinary skill in the art may not turn to descriptions of rubber-based compositions as direction for preparing the presently claimed composite resin materials.

For example, Kato II discloses composite materials “made of a rubber and a clay mineral dispersed uniformly therein,” (see Abstract). The rubber material of Kato II is described at column 3, lines 59-64. None of the rubber materials described in Kato II are polyphenylene ethers. Likewise, in Usuki the prior art composition is described as a clay mineral dispersed in a “low polar polymer” (see Abstract and Title). Usuki discloses a main guest molecule that is described as an “olefin or paraffin having straight or branched chain construction” (column 5, lines 64-67). Usuki also discloses a synthetic resin at column 8, lines 25-32. Materials such as polyethylene, polystyrene, polyisobutene, acrylic resin, polyurethane and styrene-butadiene block copolymer are disclosed. Usuki does not however disclose polyphenylene oxides.

Applicants submit that the properties of rubber materials such as those disclosed in Usuki and Kato II exhibit substantially different properties in comparison to the claimed resin composite material which contains a polyphenylene oxide. For example, inspection of Table 9 of Usuki provides the tensile strength and elongation of samples of the prior art composite clay rubber material. The greatest tensile strength is 18.3 MPa and the elongation ranges from 440 to 973%. In contrast, the tensile strengths and elongation disclosed for the invention compositions in Table 1 of the specification are much different. The tensile strength of the inventive examples ranges from 45 to 55 MPa (see new dependent Claim 19) and the elongation at break ranges from 3 to 12% (see new Claim 20). Obviously, the resin composite materials described in the examples of Table 1 of the present specification have significantly different properties in comparison to the rubber compositions of Table 9 of the Usuki patent. This may be most evident in elongation. The Usuki compositions have

elongations that are least 440% whereas the greatest elongation for the examples tabulated in Table 1 of the present specification is 12%.

Applicants therefore submit that teachings of the mechanical properties of a rubber material are not necessarily pertinent to the mechanical characteristics obtained in other compositions and would not necessarily lead those of ordinary skill in the art to apply the teachings of Usuki or Kato II to arrive at the presently claimed invention.

The Office appears to apply Patel for its teaching that organophosphates and phosphites may be used in polyphenylene ether-containing compositions. The Office asserts that the phosphates and phosphites that may be present in Patel “are intrinsically bonded to the clay as taught by the presently claimed invention, i.e., the same combination of ingredients results in the same properties.” The Office has provided no evidence for this assertion and appears to take Official Notice that mixing two materials will necessarily form a bond between the two materials. Applicants traverse the Office’s assertion on the grounds that the Office has provided no support that kneading a mixture of thermoplastic resins in the presence of a layered clay mineral and a polar compound will inherently form a mixture where the polar compound is bonded to the layered clay mineral.

Patel discloses compositions that may contain an organophosphite in an amount of 0.3% by weight. New dependent Claim 18 requires the presence of a phosphite in an amount of from 1.86 to 10 % by weight. Patel discloses that the amount of the prior art organized organoclay component may be from 0.25 to 0.75% by weight (see Patel Claim 1). New dependent Claim 6 requires that the invention layered clay mineral is present in an amount of at least 7 parts by weight.

As mentioned above, Applicants submit that the combination of Usuki with Kato II is not supportable in view of the contradictory disclosure in Usuki. Therefore, Applicants respectfully request the claimed invention is not obvious as asserted by the Office.

New independent Claim 21 has been added. The new independent claim includes the transitional phrase “consisting essentially of”. The transitional phrase “consisting essentially of” is used to describe compositions which contain at least the components explicitly recited in the claim and may further contain additional components so long as the additional components do not materially effect the basic or novel characteristics of the claimed invention. As stated in *In re Janakirama-Rao*, 137 USPQ 393 (CCPA 1963), “[t]he word ‘essentially’ opens the claims to the inclusion of ingredients which would *not* materially effect the *basic or novel characteristics* ... of the claimed invention” (emphasis in the original; see also M.P.E.P. § 2111.03 - Transitional Phrases).

Each of the compositions of Usuki, Kato I and Kato II contain a rubber or thermoplastic elastomer component. Applicants submit that the inclusion of such a component in a polyphenylene oxide composition will necessarily effect the mechanical properties of the composition. Applicants submit that those of ordinary skill in the art readily recognize that a rubber and/or elastomeric composition has properties such as high elongation at break. The compositions of polyphenylene oxide are readily recognized by those of ordinary skill in the art as more rigid than those of rubber. Therefore, the physical characteristics of polyphenylene oxide compositions are different from the physical characteristics of rubber compositions and these differences may be manifested in properties such as tensile strength, elongation at break, tensile modulus and impact strength. As was already noted for Usuki, the prior art compositions have elongation ranging from 440 to 973%. In contrast the elongation at break for the invention compositions disclosed in Table 1 on page 33 is no greater than 12%. The composition of Kato II are composites of rubber (see Abstract). The tensile strength of Embodiment 1 in columns 4 and 5 of Kato I and Embodiment II of columns 5 and 6 of Kato II are disclosed to have tensile strengths of 27.5 MPa and 20 MPa (column 5, line 27 and column 6, line 36). This is different than the tensile

strength obtained for Examples 1-9 in Table 1 of the present specification. Further, the tensile strengths of new dependent Claim 23 are not disclosed in Kato II.

The compositions of Patel are required to include glass reinforcing fibers (see Abstract and the claims). Applicants submit that those of ordinary skill in the art readily recognize that the presence of a reinforcing fiber will significantly effect the impact strength and tensile strength of a thermoplastic composition. Therefore, the partially open language (“consisting essentially of”) of the present claims exclude such a glass reinforcing fiber.

Therefore new independent Claim 21 excludes one or more components identified as essential components in the prior art compositions of record in the file which contain a polyphenylene oxide and a polar compound. Applicants submit that new independent Claim 21 is therefore not obvious in view of the prior art cited by the Office.

Respectfully submitted,

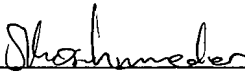
OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

NFO:SUK\la



Stefan U. Koschmieder, Ph.D.
Registration No. 50,238